

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of ~~modulating~~ suppressing or inhibiting the immune response in a patient in need of such modulation, the method comprising administering to the patient an effective amount of ~~an~~ a competitive inhibitor of asparaginyl endopeptidase, wherein the competitive inhibitor is a peptide comprising an asparagine-containing peptide.

2. (Original) A method according to Claim 1 wherein the patient has or is at risk of a disease which involves MHC Class II molecules.

3. (Original) A method according to Claim 1 or 2 wherein the disease is an autoimmune disease.

4. (Original) A method according to Claim 3 wherein the disease is rheumatoid arthritis.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Previously presented) A method according to either Claim 1 or 2 wherein the inhibitor is a competitive inhibitor.

9. (Original) A method according to Claim 8 wherein the competitive inhibitor is a peptide comprising is an asparagine-containing peptide.

10. (Original) A method according to Claim 9 wherein the peptide is an N and C-terminal blocked peptide Ala-Glu-Asn-Lys-NH (AENK) or Lys-Asn-Asn-Glu-NH (KNNE).

11. (Previously presented) A method according to any one of Claims 1 to 4 wherein the inhibitor is a non-competitive or irreversible inhibitor.

12. (Original) A method according to Claim 11 wherein the inhibitor has the structure B1-(X)_n-Asn-Q where B1 is any suitable N terminal blocking group; X is an amino acid residue; n is between 1 and 100, Asn is an asparagine residue and Q is a group capable of reacting with the active site cysteine of asparaginyl endopeptidase.

13. (Previously presented) A method according to either Claim 1 or 2 further comprising administering to the patient an effective amount of an agent for treatment or prevention or amelioration of an autoimmune disease or an allergic or hypersensitivity reaction.

Appl. No. : **09/646,950**
Filed : **December 8, 2000**

14. (Previously presented) A method according to either Claim 1 or 2 further comprising administering to the patient an effective amount of an immunosuppressive agent.

15. (Original) A method of reducing the processing of a protein antigen by a MHC Class II molecule by a cell, the method comprising contacting the cell with an inhibitor of asparaginyl endopeptidase.

16. (Original) A method according to Claim 15 wherein the inhibitor is a competitive inhibitor.

17. (Original) A method according to Claim 16 wherein the competitive inhibitor is a peptide comprising an asparagine-containing peptide.

18. (Original) A method according to Claim 17 wherein the peptide is an N and C-terminal blocked peptide Ala-Glu-Asn-Lys-NH (AENK) or Lys-Asn-Asn-Glu-NH (KNNE).

19. (Original) A method according to Claim 15 wherein the inhibitor is a non-competitive or irreversible inhibitor.

20. (Original) A method according to Claim 19 wherein the inhibitor has the structure B1-(X)_n-Asn-Q where B1 is any suitable N terminal blocking group; X is an amino acid residue; n is between 1 and 100, Asn is an asparagine residue and Q is a group capable of reacting with the active site cysteine of asparaginyl endopeptidase.

Claims 21-37 (Cancelled)

38. (Original) A pharmaceutical composition comprising an inhibitor of asparaginyl endopeptidase and a pharmaceutically acceptable carrier.

39. (Original) A pharmaceutical composition according to Claim 38 further comprising an agent which is usefully administered to a patient in need of modulation of the immune response.

40. (Previously presented) A pharmaceutical composition according to Claim 38 further comprising an agent for treatment or prevention or amelioration of an autoimmune disease.

41. (Original) A pharmaceutical composition according to Claim 38 further comprising an immunosuppressive agent.

Appl. No. : **09/646,950**
Filed : **December 8, 2000**

42. (Original) A pharmaceutical composition comprising an inhibitor of asparaginyl endopeptidase, an inhibitor of cathepsin S and a pharmaceutically acceptable carrier.

Claims 43-51 (Cancelled)

52. (Original) An inhibitor of asparaginyl endopeptidase which has the structure $B1-(X_aX_n)Asn-Q$ wherein B1 is any suitable N terminal blocking group; X_aX_n are the n amino acid residues immediately N terminal to an Asn cleavage site in the invariant chain of Class II MHC molecules; Asn is an asparagine residue; and Q is a group capable of reacting with the active site of asparaginyl endopeptidase.

53. (Previously presented) An inhibitor according to Claim 52 wherein the number of amino acid residues in (X_aX_n) is between 1 and 25.

54. (Original) An inhibitor according to Claim 53 which is any of B1-Ser-Gln-Asn-Q; B1-Leu-Glu-Asn-Q; B1-Leu-Gln-Asn-Q; B1-Pro-Glu-Asn-Q; B1-Leu-Lys-Asn-Q; B1-Gln-Asn-Q; B1-Glu-Asn-Q; B1-Asp-Glu-Asn-Q; B1-Asn-Gly-Asn-Q; B1-Phe-Pro-Asn-Q; B1-Val-Pro-Asn-Q; and B1-His-His-Asn-Q.

55. (Original) An inhibitor of asparaginyl endopeptidase which has the structure $(X_bX_c)Asn(X_dX_e)$ wherein (X_bX_c) are the r amino acid residues immediately N terminal to an Asn cleavage site in the invariant chain of Class II MHC molecules and (X_dX_e) are the s amino acid residues immediately C terminal to an Asn cleavage site in the said invariant chain; Asn is an asparagine residue; and r and s are independently between 2 and 25.

56. (Original) A composition comprising an inhibitor of asparaginyl endopeptidase and an inhibitor of cathepsin S.

57. (Previously presented) A method according to Claim 1 wherein the patient has or is at risk of an allergic or hypersensitivity reaction.

58. (Previously presented) A method according to Claim 1 wherein the patient has undergone or is to undergo a transplant.

59. (Previously presented) A method according to Claim 58 wherein the material transplanted, or to be transplanted, has been contacted with an effective amount of an inhibitor of asparaginyl endopeptidase.

Appl. No. : **09/646,950**
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60. (Previously presented) A method according to Claim 15 wherein the cell is, or is comprised in a tissue or organ, for transplantation into a patient.

61. (Previously presented) An inhibitor according to Claim 53 wherein the number of amino acid residues in (X_aX_n) is between 2 and 10.